STATE OF ILLINOIS

ILLINOIS COMMERCE COMMISSION

COMMONWEALTH EDISON COMPANY	:	
	:	
Application of COMMONWEALTH EDISON COMPANY, for a Certificate of Public Convenience and Necessity, Pursuant to Section 8-406 of the Illinois Public Utilities Act, to construct, operate and maintain a new 138,000 volt electric transmission line in Cook County, Illinois.	:	No. 01-0833

Rebuttal Testimony of

THOMAS E. WIEDMAN

Director of Transmission Planning
Commonwealth Edison Company

Q. Please state your name and business address.

A. Thomas E. Wiedman. My business address is Commonwealth Edison Company, Two Lincoln Centre, Oakbrook Terrace, Illinois 60181-4260.

Q. And you are the same Mr. Wiedman that presented direct testimony on behalf of ComEd?

A. That's right.

Q. What is the purpose of your rebuttal testimony?

A. I will respond to issues raised by Staff witness Gregory Rockrohr. I will address the specific areas identified by Mr. Rockrohr, (1) providing information demonstrating that the proposed ComEd plan is the least cost alternative, (2) describing the future projects that would be impacted by construction of a "reduced scope plan", and (3) explaining the likelihood that ComEd will build its planned future projects.

Q. What is your conclusion regarding the "reduced scope plan" proposed in Mr. Rockrohr's testimony?

A. While Mr. Rockrohr's "reduced scope plan" does reduce the implementation cost of our proposed project for 2003, it would also increase the costs of future projects scheduled for completion in 2005 and 2006. ComEd refers to all of these projects as the "Chicago Optimization Plan."

Q. Briefly, what is the basis for your conclusion?

A. I will provide information that demonstrates that the plan proposed by ComEd is the least cost implementation of the overall objectives of the Chicago Optimization Plan. I will do this by first describing a year-by-year implementation of both ComEd's proposed plan and Mr. Rockrohr's "reduced scope plan." I will then present the year-by-year

differential cost and net present value (NPV) of each plan. This analysis demonstrates that ComEd's proposed plan is the least cost plan when all the projects that are part of the Chicago Optimization Plan are considered.

Q. You refer to the Chicago Optimization Plan and Mr. Rockrohr's testimony does as well. Can you remind the Commission of what that is?

A. Yes. The Chicago Optimization Plan is an overall plan, consisting of a series of major projects, developed to increase capacity and improve reliability in central Chicago, at least cost. Broadly speaking, it involves the construction of a number of new substations in the city, and new lines between existing and new substations so that ComEd's system can better respond to increased loads and to inevitable equipment outages, both planned and unplanned. The Optimization Plan has been presented to the Commission on a number of occasions by ComEd senior management; it was the subject of the testimony of Michael Rowe in the first docketed proceeding involving an Optimization Plan project, docket 01-0513 (the Fisk to Dekoven line, which powers the Dekoven substation, where the proposed line in this docket starts); and it forms an essential feature of ComEd's written franchise commitments to the City of Chicago. My rebuttal testimony will assume that the Commission is generally familiar with the Optimization Plan.

Q. And the project for which ComEd seeks approval here is part of this Chicago Optimization Plan?

A. Yes, this project is an essential part of the overall plan.

Q. Does Mr. Rockrohr suggest that the Chicago Optimization Plan is flawed or undesirable?

A. No, he does not. Mr. Rockrohr accepts that ComEd will need to build the various portions of the plan that ComEd proposes.

Q. What is the project that Mr. Rockrohr refers to as the "Reduced Scope Plan?"

A. The Reduced Scope Plan is basically a portion of ComEd's proposed plan, deferring some of the parts of ComEd's plan to a later date.

Q. How have you analyzed the Reduced Scope Plan and compared it with ComEd's proposed plan?

A. The appropriate way to compare two plans with different investments at different times is using the net present value of the required investments. We consider the cost, in each proposal, of developing the same capabilities that meet the required objectives. Rather than merely comparing the initial investment, or even the costs that will be incurred in constructing the facilities proposed right now, we must compare all the facilities reasonably anticipated to serve the area's needs. This may involve comparing the costs of future projects. The Commission has approved the use of this technique in a number of previous dockets, and Mr. Rockrohr concurs in his testimony that it should be used here.

Q. What is your overall conclusion?

A. As I explain below, both plans, if implemented as I describe, would meet ComEd's short-term and long-term objectives. My analysis shows that ComEd's proposed plan is more reliable and is least cost.

Description and cost analysis of projects impacted by construction of the Reduced Cost Plan

Q. What are the key components and in-service dates falling within the scope of the Petition?

A. Under the Chicago Optimization Plan, the following table shows the in-service dates of the key components:

Project	In-Service Date
Install Dekoven-Grand-Crosby 138kV Lines	6/1/2003
Install West Loop 138kV buses	6/1/2004
Re-route Grand-Crosby cables to West Loop	6/1/2004
Install new Crosby to West Loop cables	6/1/2004
Re-route 2 Ontario-Crosby cables to West Loop	6/1/2004
Re-route 1 Clybourn-Crosby cables to West Loop	6/1/2004

The Crosby to Ontario Cables

Q. What is key difference between ComEd's proposed plan and the Reduced Scope Plan?

A. A key difference is the alternative ways that the Crosby to Ontario cables will be used as network lines.

Q. How are the plans similar and different?

A. In both the proposed plan and the Reduced Scope Plan, the existing four 138 kV cables between Crosby and Ontario will eventually serve as network paths, with Y-joints near Ontario. However, there are three different ways that ComEd can provide a bulk power path from Dekoven to Grand to West Loop and Crosby in 2003 in conjunction with future projects that use the transmission lines associated with Ontario Substation.

Q. What are these future projects that will use these lines?

A. In 2005 and 2006, the Optimization Plan calls for a connection between West Loop, Crosby and Taylor, through Columbus, Randolph, and Ontario substations.

Q. How would ComEd's proposed plan and the Reduced Scope Plan achieve these objectives?

A. In ComEd's proposed plan, we would connect Grand to Crosby in 2003, in 2004 build West Loop and re-route 2 Crosby-Ontario cables to West Loop, and in 2005 and 2006, connect Columbus and Randolph to Crosby and West Loop using the existing Ontario lines. This is depicted on Attachment TEW-4. Starting with the Reduced Scope Plan in 2003, as suggested by Mr. Rockrohr, there would be two alternative ways of completing the reinforcement in the ensuing years. First, ComEd could connect Grand to Ontario and Crosby using Y-joints, as specifically suggested by Mr. Rockrohr. This is shown on Attachment TEW-3. Second, ComEd could do that connection temporarily, and then remove the Y-joints when the Taylor-Randolph-Ontario-West Loop connection is constructed in 2006.

Q. Please provide the specifics as to what would be built when in ComEd's proposed plan.

A. Under ComEd's proposed plan, including the connection from Grand and Ohio to Crosby, the major features of the reinforcement are as follows:

Transmission Route Segment	Major Expenditure Item
Ohio/Grand to Crosby (2003)	Install XLPE cable in existing duct from Grand TSS to Chicago & Kingsbury.
	Install XLPE duct and cable from Chicago & Kingsbury to Crosby TSS.
Randolph to West Loop (2006)	Install HPFF duct and cable from the access shaft on the north side of the Chicago River to new Y-joints in existing manholes near the Ontario TDC.

Q. Please provide similar information for the first Reduced Scope Plan alternative you mentioned.

A. The first Reduced Scope Plan alternative, employing and maintaining the Y-joints connecting Grand, Ontario, and Crosby, has the following major features of reinforcement:

Transmission Route Segment	Major Expenditure Item
Ohio/Grand to Crosby (2003)	Install HPFF transitions to GIS at Ohio/Grand.
	Install HPFF pipe, duct and cable from Ohio/Grand to the existing Crosby – Ontario transmission lines on Huron and Erie Streets.
	Install Y-joints in existing manholes on Huron and Erie Streets.
Randolph to West Loop (2006)	Install XLPE duct and cable from the access shaft on the north side of the Chicago River to Ohio/Grand TSS.
	Install XLPE cable in existing duct from Grand TSS to Chicago & Kingsbury.
	Install XLPE duct and cable from Chicago & Kingsbury to Crosby TSS.

Q. And what about the second Reduced Scope Plan alternative?

A. The second Reduced Scope Plan alternative, in which the Y-joints near Ontario are used temporarily until the Taylor-Randolph-West Loop connection in2006, has the following major features:

Transmission Route Segment	Major Expenditure Item
Ohio/Grand to Crosby (2003)	Install HPFF transitions to GIS at Ohio/Grand.
	Install HPFF pipe, duct and cable from Ohio/Grand to the existing Crosby – Ontario transmission lines on Huron and Erie Streets.
	Install Y-joints in existing manholes on Huron and Erie Streets.
Randolph to West Loop (2006)	Install HPFF duct and cable from the access shaft on the north side of the Chicago River to new Y-joints in existing manholes near the Ontario TDC.

Ohio/Grand to Crosby (2006)	Remove Y-joints installed in 2003 for Ohio/Grand to Crosby transmission route.
	Install XLPE cable in existing duct from Grand TSS to Chicago & Kingsbury.
	Install XLPE duct and cable from Chicago & Kingsbury to Crosby TSS.

Q. Has ComEd made a cost comparison of ComEd's proposed plan with these two alternatives that begin with the Reduced Scope Plan?

A. Yes.

Q. What were your results?

A. Our net present value comparison is shown in Attachment TEW-5. In summary, the net present value of ComEd's proposed plan is $2.2 million less than the first Reduced Scope Plan alternative, and $3.2 million less than the second Reduced Scope Plan alternative.

Q. Are there any reliability differences between the alternatives?

A. Yes. The tap to Ontario on the bulk power path between Grand and West Loop, which is a part of the Reduced Scope Plan, would reduce reliability compared to ComEd's proposed plan.

Q. Why?

A. Because faults and maintenance outages at Ontario TDC would interrupt the bulk power path.

Q. Didn't you say that ComEd would eventually tap the Ontario lines following ComEd's proposed plan?

A. Yes, but ComEd would tap the lines from Ontario to Columbus and from Ontario to Randolph. These lines are not planned to be bulk power lines due to their limited load-carrying capability. The reliability is therefore acceptable.

Diverse Sources for Ontario

Q. One of the objectives for this project you mentioned in your direct testimony is diverse sources of 138 kV power for the Ontario substation. Does ComEd's proposed plan meet this objective?

A. Yes. Under ComEd's proposed plan, Ontario is fed independently from West Loop and from Crosby.

Q. Is this objective met by the Reduced Scope Plan?

A. No, it is not.

Q. Why do you say that?

A. By using Y-joints to connect Grand to the Ontario-Crosby lines, Grand is not an independent source to Ontario. This is true because there are no isolation devices at or near Ontario.

Q. Can you provide an example?

A. Yes. If there were a fire at Crosby and ComEd had to de-energize the entire substation to allow the fire department to fight the fire, the 138 kV cables leading out of Crosby would need to be de-energized. This means the two cables leading to Ontario and Grand, connected via Y-joint, would be de-energized, as well as the other two cables going directly from Crosby to Ontario. The result would be that all load served by Ontario would be lost.

Q. Couldn't Ontario be powered from Grand?

A. Because of the Y-joint and absence of isolation devices, Grand could only power Ontario by livening the entire line, including the cable terminations at Crosby. That would be dangerous for the firefighters.

Q. How would ComEd's proposed plan deal with the same situation?

A. In ComEd's proposed plan, two cables of the four cables currently connecting Crosby and Ontario would be re-routed to connect Ontario to West Loop. Even if Crosby was completely de-energized, Ontario would stay energized through the West Loop feed.

Additional Sources for Clybourn

Q. Another of the objectives you set out in your direct testimony is to establish a new source of supply for Clybourn. Explain why this is an objective.

A. TSS 54 Clybourn has four 138-12 kV transformers serving customers. Clybourn should be what we call a single contingency substation. A single contingency substation is defined as a substation that can withstand loss of one 138-12 kV transformer – in this case one of its four transformers – without shedding any load.

Clybourn is connected to Diversey by one 138kV cable and to Crosby by three 138kV cables. However, two of the three cables to Crosby are radial – that is, they are completely dependent on Crosby being up and energized. Under the current configuration, if we lose the 138kV bus at Crosby, two transformers would be lost at Clybourn. The remaining two transformers at Clybourn would be supplied from Diversey and would be able to serve a total load of 155 MVA. The remaining 37 MVA would need to be shed to avoid an equipment-damaging overload. This means that roughly

5,800 customers would be without power until Crosby is restored. The objective is to avoid this result.

I should point out that the current reliance on Crosby is analogous to the situation at Jefferson. As experience taught us in 1999, the loss of a major substation which radially supplies a number of other substations can lead to customers in the central business district losing power, a result we find unacceptable. Our Dekoven project, which the Commission certified in December and which is nearing completion, will provide a backup to Jefferson. In this docket, we aim to provide the same kind of backup for Crosby; and in future projects, we will provide similar diverse sources for other radially supplied substations. This is a fundamental objective of the Chicago Optimization Plan.

Q. How does ComEd's proposed plan meet this objective as to Clybourn?

A. ComEd's proposed plan would re-route one of the radial Crosby-Clybourn cables to West Loop. Then if Crosby goes down, we can supply three of the four transformers from Diversey and West Loop, and no customers lose power.

Q. Is there a feasible alternative to improve reliability at Clybourn?

A. Yes. An alternative plan to improve reliability at Clybourn would involve re-routing an existing Diversey – Crosby cable into Clybourn. In this configuration, Clybourn would have two cables from Crosby, and two from Diversey. Again, this would reduce Clybourn's over-reliance on Crosby.

Q. How would that alternative compare in cost?

A. This alternative, which is to re-route cable 4018, currently running from Diversey to Crosby, through Clybourn, would cost $6.65 million. Re-routing a Crosby-Clybourn cable to West Loop, as ComEd proposes, will have an actual cost of about $4.07 million. There is no need to compare net present value of future investments, because this aspect of the project does not affect future portions of the Optimization Plan. The cost comparison of the two alternatives is shown on attachment TEW-6 I conclude that ComEd's proposed plan is the least cost means of satisfying the Clybourn reliability objective.

Future Projects and Their Likelihood

Q. One of the things that Mr. Rockrohr invited you to comment on was the likelihood that ComEd will build the future projects that form the Chicago Optimization Plan. Could you go through these projects?

A. Yes. In general, TSS Columbus, TSS Randolph, Dearborn 12kv Backup, and Plymouth Court 12kv Backup are all required by the Franchise Agreement between ComEd and Chicago, to improve reliability and add capacity in the business district of Chicago, and are essential components of ComEd's Chicago Optimization Plan. The likelihood of installing these projects as currently planned is high. The conversion of Dearborn to 138 kV project is not a franchise commitment, and although it will eventually be installed, the date is uncertain.

Q. Please describe the TSS Columbus project.

A. TDC 745 IC Air Rights is connected to Taylor by four 138 kV radial cables, much as TDC 785 Ontario is connected to Crosby. The new Columbus substation will be located adjacent to the existing IC Air Rights and will provide diverse sources to IC Air Rights.

It will also provide a tie between Taylor and West Loop, enhancing reliability: Columbus will be connected to Taylor and West Loop by two 138kv lines to each site. To minimize the cost of building transmission lines, two of the existing Taylor to IC Air Rights lines will be used for the Taylor to Columbus lines, and two of West Loop to Ontario lines will be extended to Columbus. The Columbus to West Loop lines will include Y-joints for Ontario. The planned service date is June 2005. However, to install this project without impacting reliability of existing load served from IC Air Rights substation, ComEd plans to energize the Columbus ring bus as early as fall, 2004.

Q. Tell us about the TSS Randolph project.

A. Randolph will be located somewhere west of Michigan Avenue, near Randolph Street. Randolph will be supplied by two 138 kV lines from Taylor and two from Crosby. To minimize the cost of building new transmission lines, two of the existing Taylor to IC Air Rights cables would be used for the Taylor to Randolph lines, and two of the Crosby to Ontario cables would be used for the Randolph to Crosby lines. The Randolph to Crosby lines would include Y-joints for Ontario. The purpose of Randolph is to provide additional distribution capacity and provide an additional transmission tie between Taylor and Crosby. Our planned service date is June 2006.

Q. What is the Dearborn backup project you mentioned?

A. TSS 78 Dearborn is connected to TSS 45 Jefferson by four radial 69 kV cables. Dearborn backup is a project to provide 100% backup for the 12 kV load at Dearborn by installing 12kV feeder ties to Randolph. Cost effective implementation of this project is contingent on our prior installation of Randolph. Our planned service date is June 2007.

Q. And what is the Plymouth Court backup?

A. Like Dearborn, TSS 49 Plymouth is connected to TSS 45 Jefferson by four radial 69 kV cables. Plymouth backup is a project to provide 100% backup for the 12 kV load at Plymouth Court by installing 12kV feeder ties to Randolph. Cost effective implementation of this project is contingent on our prior installation of Randolph. Our planned service date is June 2007.

Q. And finally, describe the conversion of Dearborn to 138 kV.

A. The conversion of Dearborn to 138 kV is a project to replace the four 69 kV transformers at Dearborn substation with 138 kV transformers. Our planned service date for this conversion is undetermined, but it will be after 2007.

Conclusion

Q. What do you conclude based on your studies?

A. ComEd's proposed plan is the least cost plan for expanding capacity and improving reliability in the City of Chicago, and, in particular, achieving the goals of the Chicago Optimization Plan.

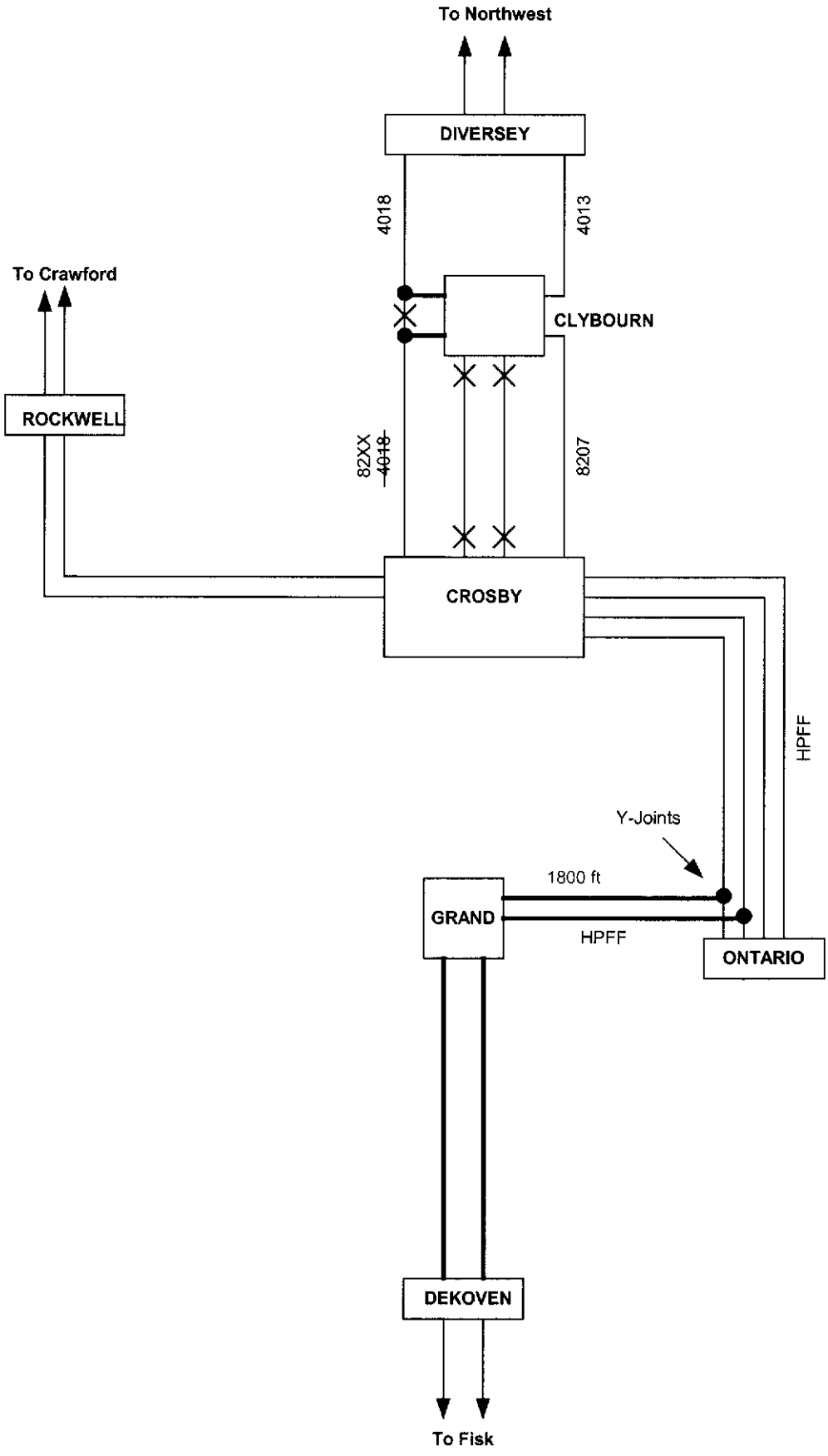
Q. Do you agree with the conclusion of Mr. Rockrohr that the Commission should only certify the Reduced Scope Plan?

A. No. The Reduced Scope Plan does not meet all the objectives of ComEd's proposed plan. Moreover, it is not the least cost alternative when needed future projects are taken into account, in accordance with Commission practice in comparing alternatives. I believe the Commission should issue a certificate for ComEd's proposed plan.

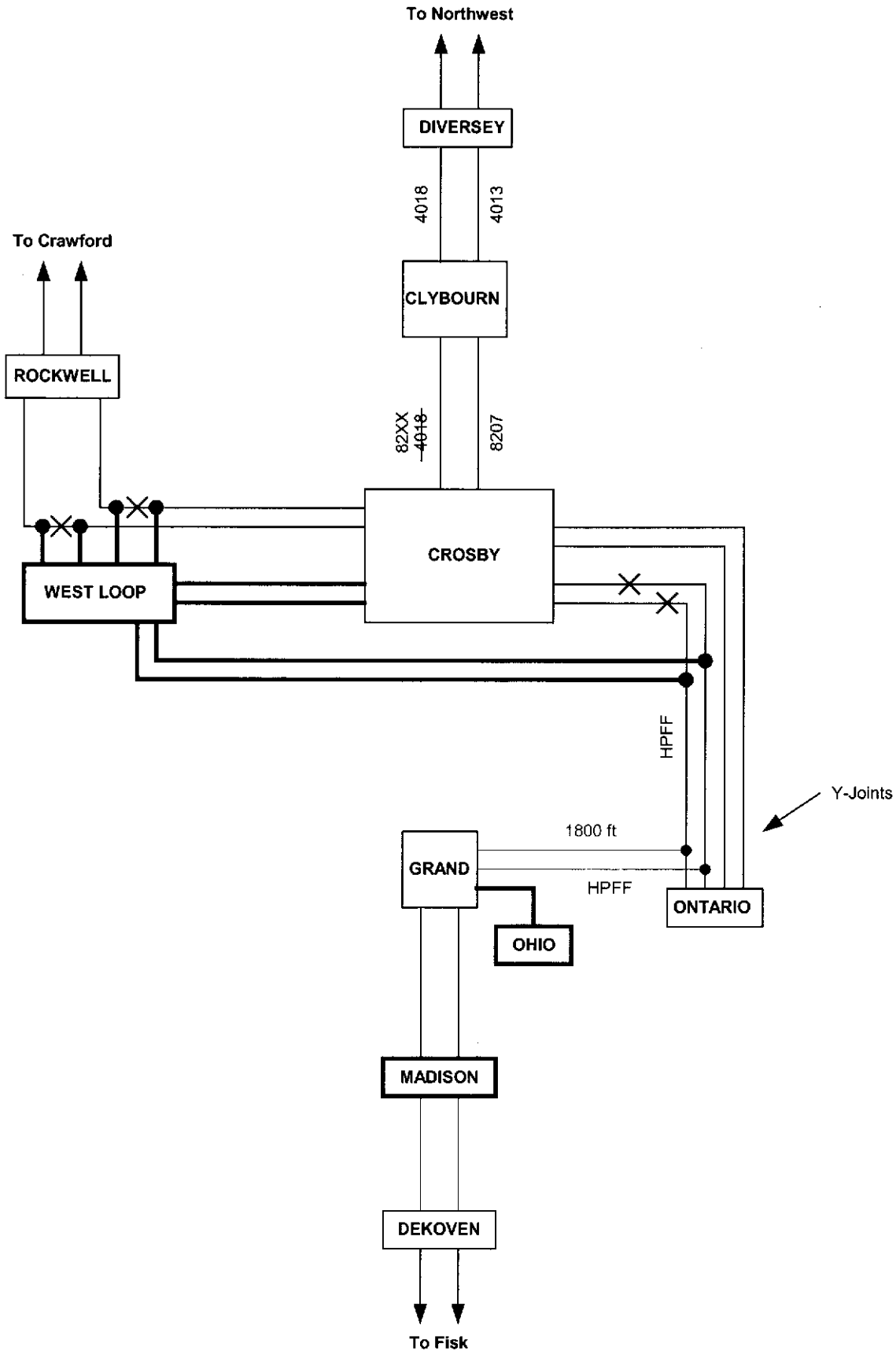
257 Q. Does this complete your rebuttal testimony?

258 A. Yes.

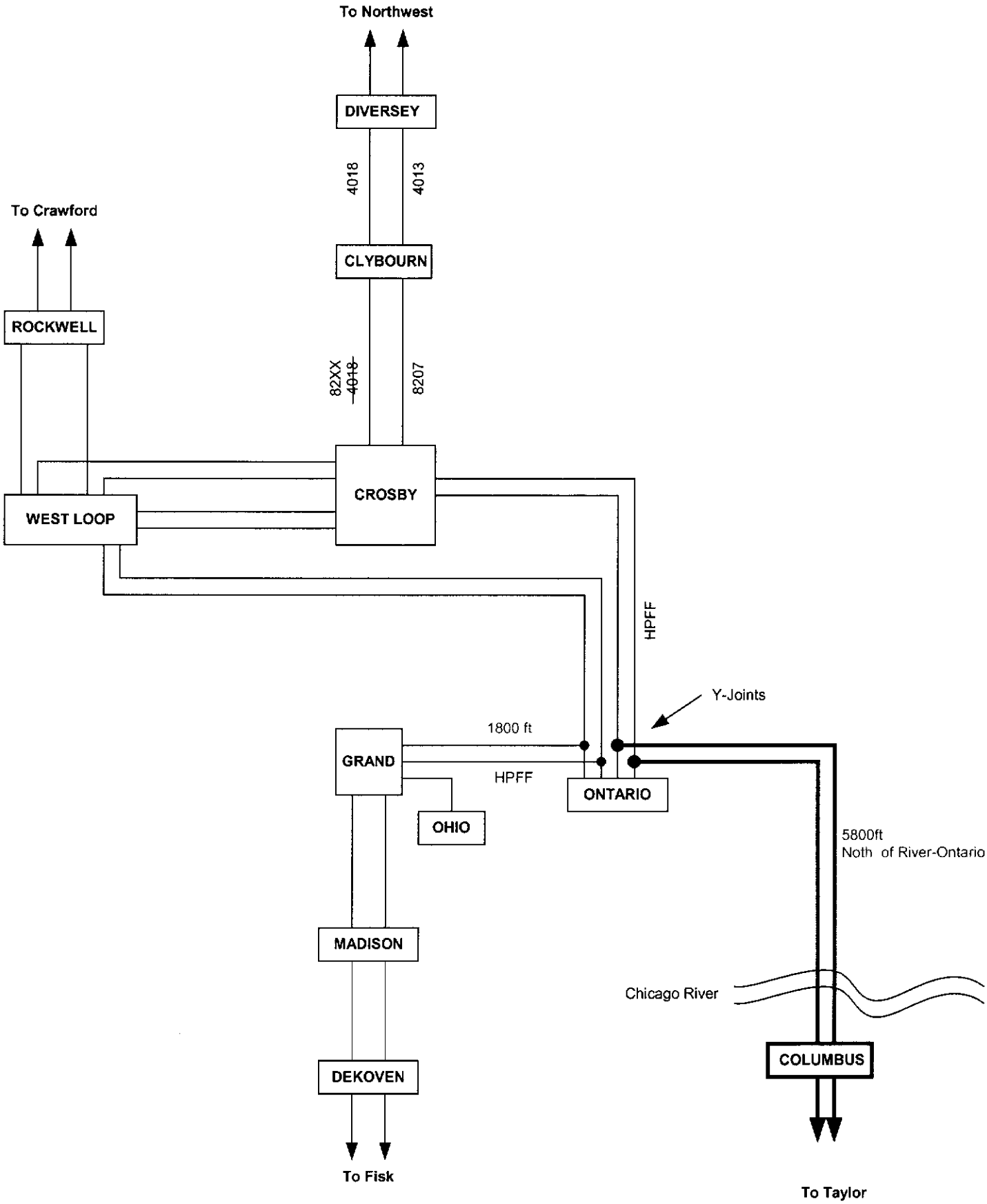
TEW- 3
REDUCED PLAN
2003



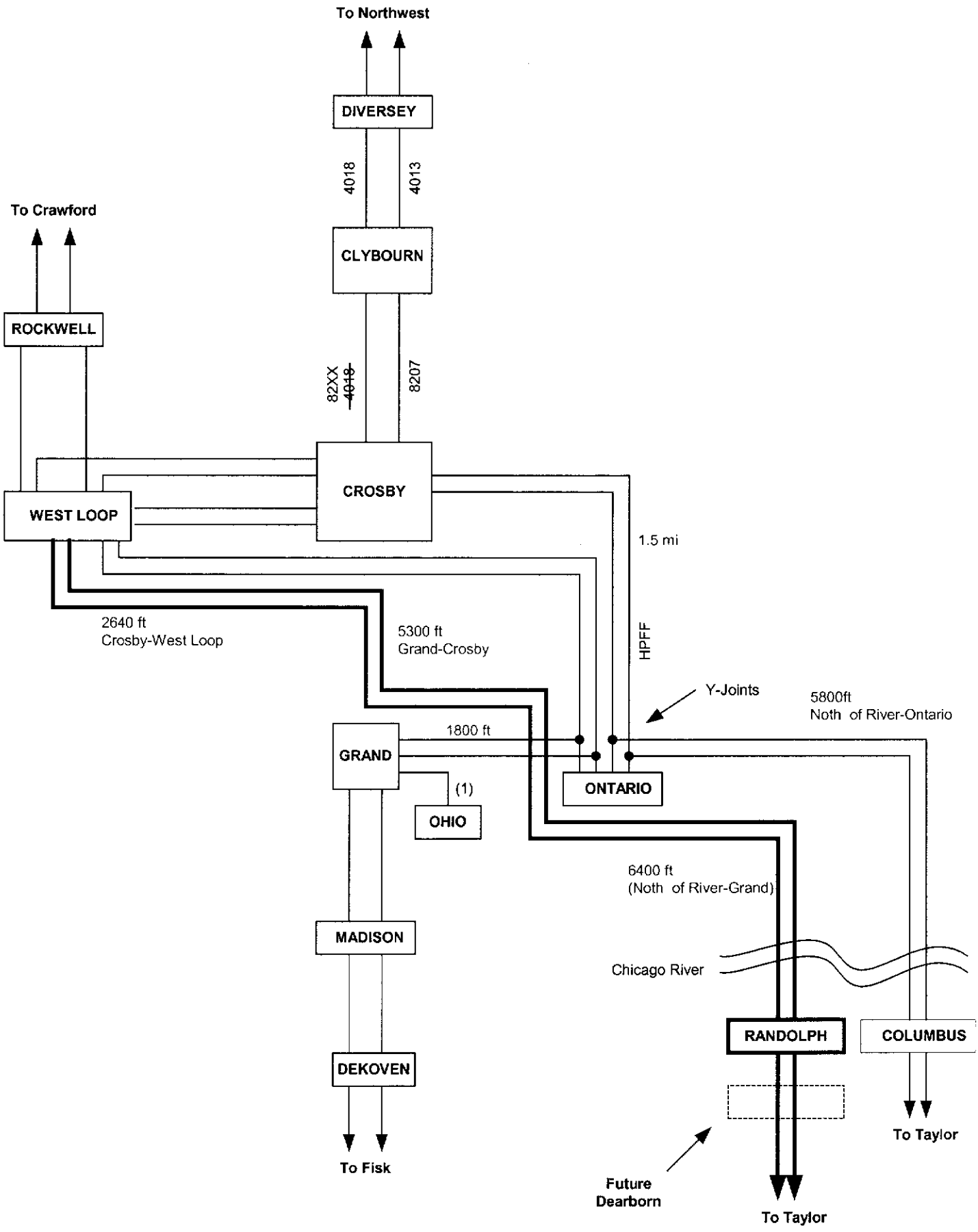
TEW- 3
REDUCED PLAN
2004



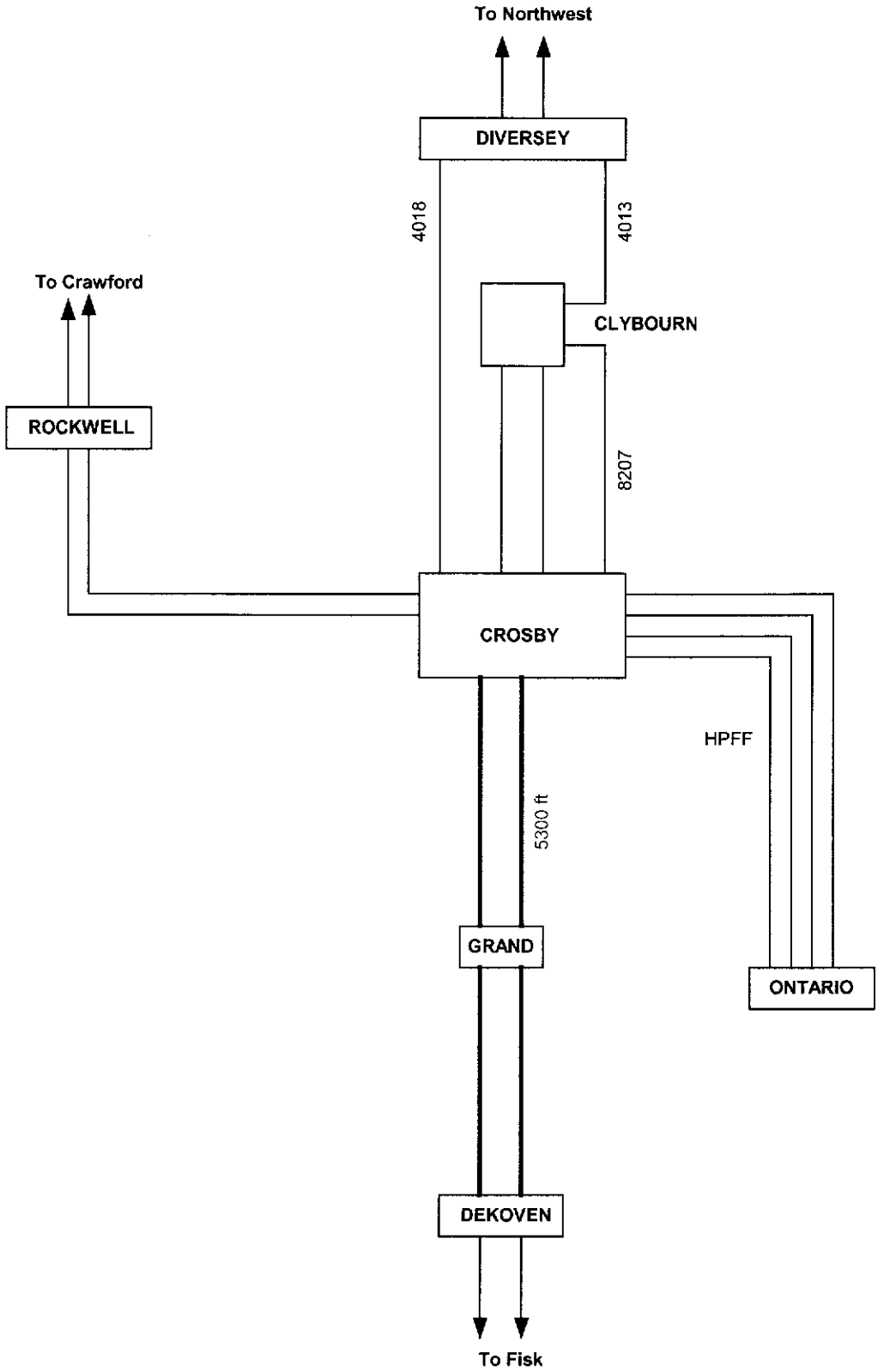
TEW- 3
REDUCED PLAN
2005



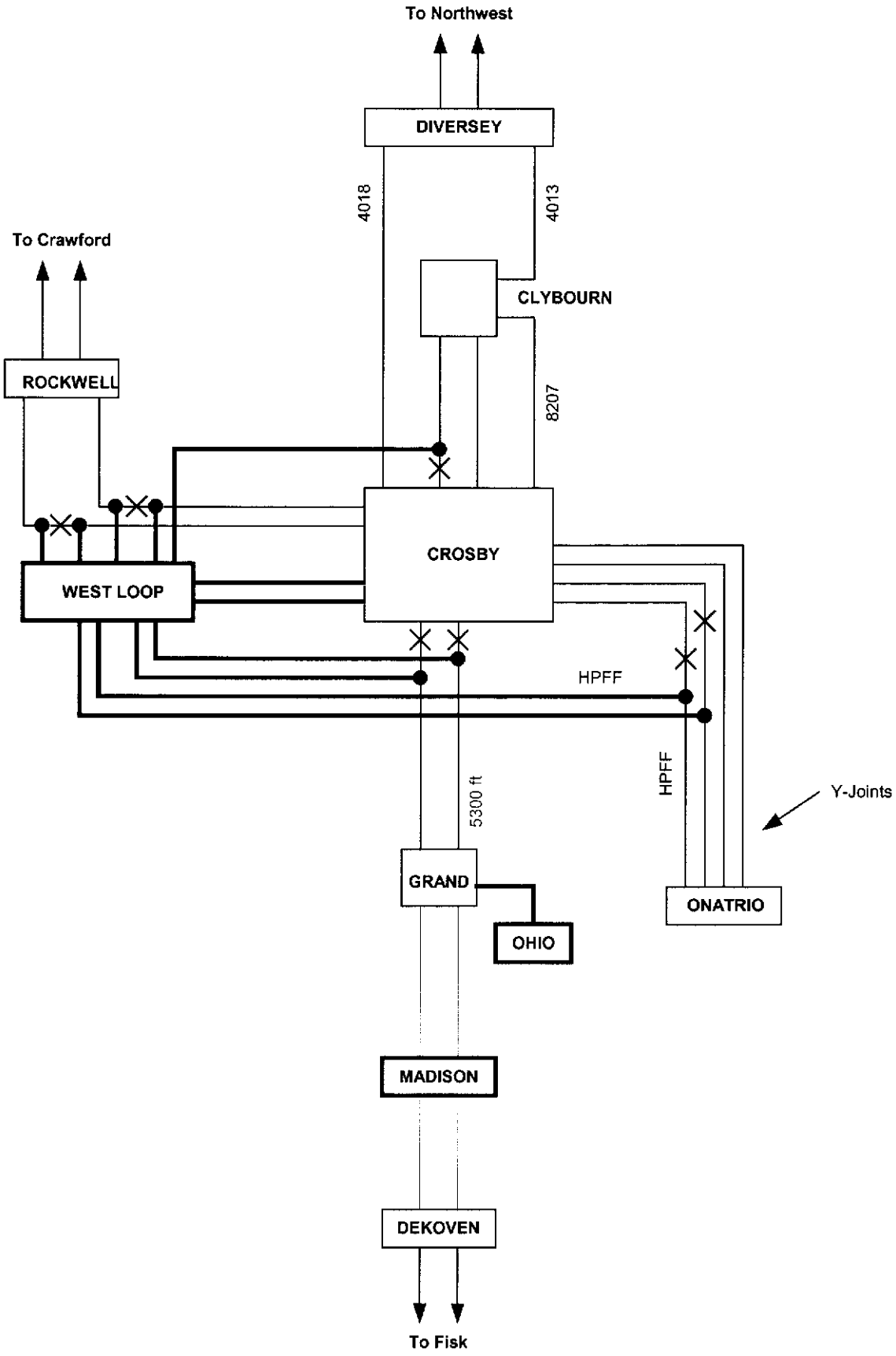
TEW - 3
REDUCED PLAN
2006



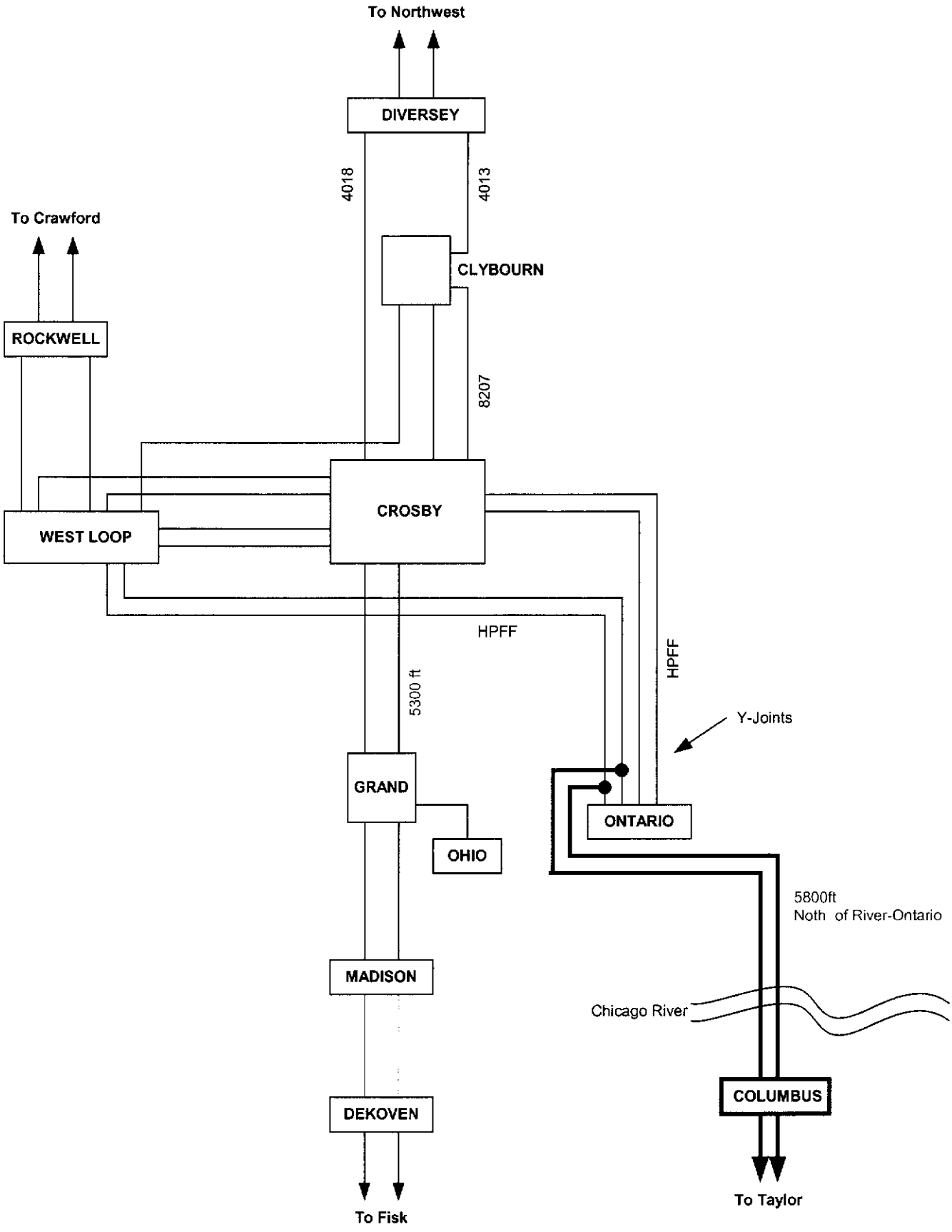
TEW - 4
ComEd PROPOSED PLAN
2003



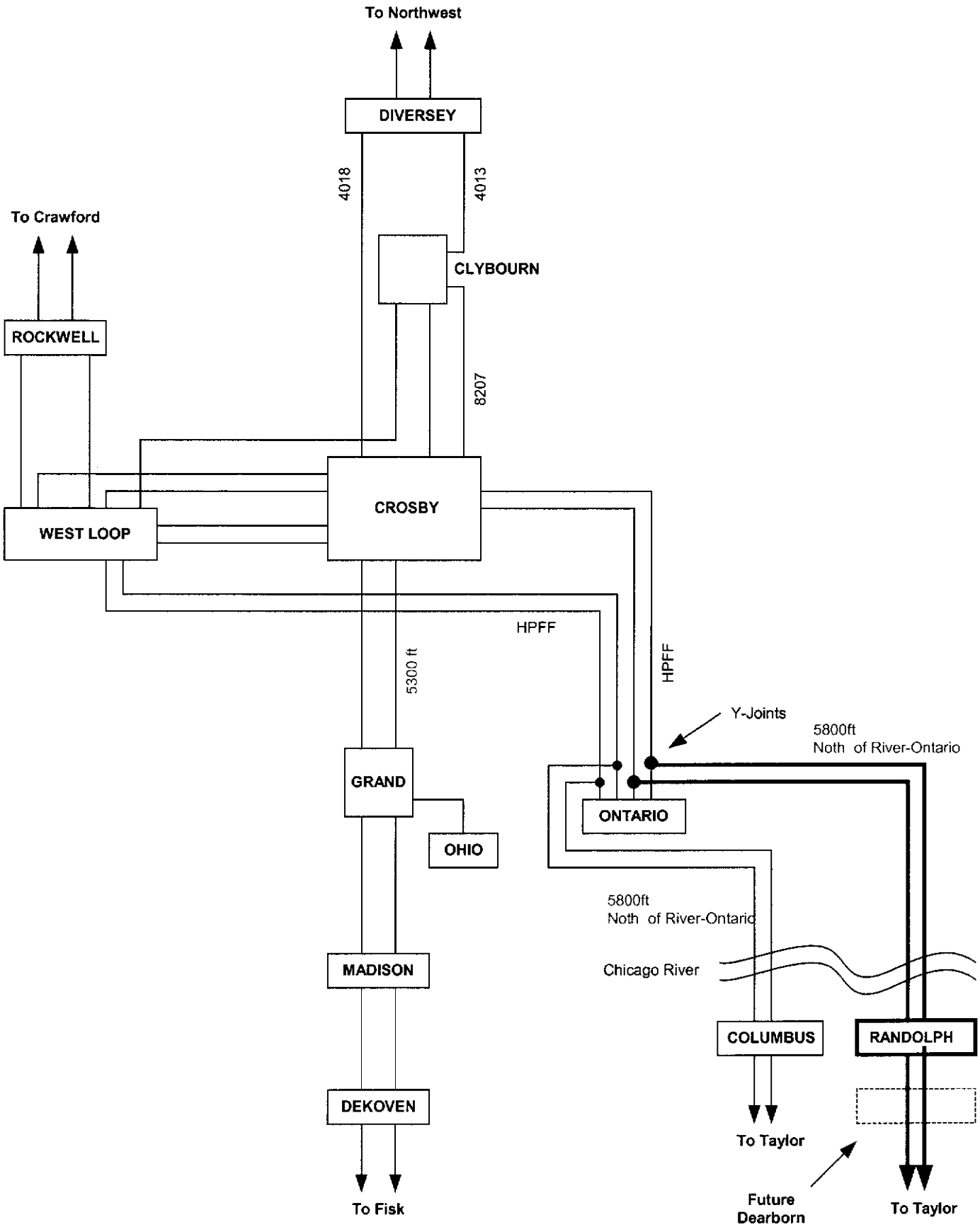
TEW - 4
ComEd PROPOSED PLAN
2004



TEW - 4
ComEd PROPOSED PLAN
2005



TEW - 4
ComEd PROPOSED PLAN
2006



Evaluation of Optimization plans 2002 - 2006

only incremental costs per plan are being evaluated

Base date	*2002*	
Escalation rate	3.0%	
Discount rate	7.8%	
Tax rate	40.0%	
Tax Afudc rate	5.6%	
PVTWO (thru 2005)	63.8%	tax note: value applies to projects purchasing material prior to 9/10/04 and in service by 12/31/05
PVTWO (2006 & after)	51.3%	

Scenario 1 : ComEd Proposed Plan

Cumulative PV ($1000) **(10,722)**

Scenario 2 : First Reduced Plan

Cumulative PV ($1000) **(12,890)**

Scenario 3 : Second Reduced Plan

Cumulative PV ($1000) **(13,945)**

ComEd Proposed Plan
Use of Crosby-Ontario Cables
only incremental costs per plan are being evaluated

Base date	*2002*
Escalation rate	3.0%
Discount rate	7.8%
Tax rate	40.0%
Afudc rate	5.6%
PVTWO (thru 2005)	63.77%
PVTWO (2006 & after)	51.35%

tax note: value applies to projects purchasing material prior to 9/10/04 and in service by 12/31/05

DCF Analysis $1000's - (2002$)

	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Totals
Investment Costs												
Grand - Crosby	2003											
XLPE duct & cable		(2,240)	(2,240)									(4,480)
XLPE cable		(630)	(630)									(1,260)
Subtotal		(2,870)	(2,870)	-	-	-	-	-	-	-	-	(5,740)
Randolph - West Loop	2006											
HPFF duct & cable					(4,930)	(4,930)						(9,860)
2- Y joints, existing manhole,pipe freeze					(240)	(240)						(480)
Subtotal		-	-	-	(5,170)	(5,170)	-	-	-	-	-	(10,340)
Investment # 3	2008											
Subtotal		-	-	-	-	-	-	-	-	-	-	-
Total Investments		(2,870)	(2,870)	-	(5,170)	(5,170)						(16,080)
Expensed Costs												
												-
												-
												-
Total Expense		-	-	-	-	-	-	-	-	-	-	-
Non-depreciable costs												
Land purchase												-
Easement rights												-
Total non-depreciable costs		-	-	-	-	-	-	-	-	-	-	-
		(2,870)	(2,870)	-	(5,170)	(5,170)	-	-	-	-	-	

Escalated Budget $	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Investments												
Grand-Crosby	2003	(2,956)	(3,045)	-	-	-	-	-	-	-	-	(6,001)
Randolph - West Loop	2006	-	-	-	(5,819)	(5,993)	-	-	-	-	-	(11,812)
	2008	-	-	-	-	-	-	-	-	-	-	-
Total Investment $		(2,956)	(3,045)	-	(5,819)	(5,993)	-	-	-	-	-	(17,813)
Total Expense $		-	-	-	-	-	-	-	-	-	-	-
Total non-depreciable $		-	-	-	-	-	-	-	-	-	-	-
Total Budget $		(2,956)	(3,045)	-	(5,819)	(5,993)	-	-	-	-	-	(17,813)
Tax Impacts												
Grand-Crosby			1,573									
Randolph - West Loop						2,493						
0								-				
Investment tax NPV subtotal		-	1,573	-	-	2,493	-	-	-	-	-	
Expense		-	-	-	-	-	-	-	-	-	-	
Total tax impact		-	1,573	-	-	2,493	-	-	-	-	-	
Totals		(2,956)	(1,472)	-	(5,819)	(3,500)	-	-	-	-	-	
PV factors		0.9276	0.8605	0.7983	0.7405	0.6869	0.6372	0.5911	0.5483	0.5087	0.4719	

Present Values ($1000)	**(2,742)**	**(1,267)**	**-**	**(4,309)**	**(2,405)**	**-**	**-**	**-**	**-**	**-**	
Cumulative PV ($1000)	**(2,742)**	**(4,009)**	**(4,009)**	**(8,318)**	**(10,722)**	**(10,722)**	**(10,722)**	**(10,722)**	**(10,722)**	**(10,722)**	

First Reduced Plan
Use of Crosby-Ontario Cables
only incremental costs per plan are being evaluated

Base date	2002	
Escalation rate	3.0%	
Discount rate	7.8%	
Tax rate	40.0%	
Afudc rate	5.6%	
PVTWO (thru 2005)	63.77%	tax note: value applies to projects purchasing material prior to 9/10/04 and in service by 12/31/05
PVTWO (2006 & after)	51.35%	

DCF Analysis $1000's - (2002$)

	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Totals
Investment Costs												
Grand - Crosby	2003											
Install HPFF tranistion at Grand		(210)	(210)									(420)
Install HPFF duct & cable		(1,870)	(1,870)									
Install new manhole		(50)	(50)									
Expand manhole		(25)	(25)									
Y - joints in manhole, pipe freeze		(240)	(240)									(480)
Subtotal		(2,395)	(2,395)	-	-	-	-	-	-	-	-	(4,790)
Randolph - West Loop	2006											
XLPE duct & Cable					(4,480)	(4,480)						(8,960)
XLPE duct & cable					(2,240)	(2,240)						
XLPE cable					(630)	(630)						(1,260)
Subtotal		-	-	-	(7,350)	(7,350)	-	-	-	-	-	(14,700)
Investment # 3	2008											
Subtotal		-	-	-	-	-	-	-	-	-	-	-
Total Investments		(2,395)	(2,395)	-	(7,350)	(7,350)						(19,490)
Expensed Costs												
												-
												-
Total Expense		-	-	-	-	-	-	-	-	-	-	-
Non-depreciable costs												
Land purchase												-
Easement rights												-
Total non-depreciable costs		-	-	-	-	-	-	-	-	-	-	-
		(2,395)	(2,395)	-	(7,350)	(7,350)	-	-	-	-	-	

Escalated Budget $	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Investments												
Grand-Crosby	2003	(2,467)	(2,541)	-	-	-	-	-	-	-	-	(5,008)
Randolph - West Loop	2006	-	-	-	(8,272)	(8,521)	-	-	-	-	-	(16,793)
	2008	-	-	-	-	-	-	-	-	-	-	-
Total Investment $		(2,467)	(2,541)	-	(8,272)	(8,521)	-	-	-	-	-	(21,801)
Total Expense $		-	-	-	-	-	-	-	-	-	-	-
Total non-depreciable $		-	-	-	-	-	-	-	-	-	-	-
Total Budget $		(2,467)	(2,541)	-	(8,272)	(8,521)	-	-	-	-	-	(21,801)
Tax Impacts												
Grand-Crosby			1,313									
Randolph - West Loop						3,544						
0								-				
Investment tax NPV subtotal		-	1,313	-	-	3,544	-	-	-	-	-	
Expense		-	-	-	-	-	-	-	-	-	-	
Total tax impact		-	1,313	-	-	3,544	-	-	-	-	-	
Totals		(2,467)	(1,228)	-	(8,272)	(4,976)	-	-	-	-	-	
PV factors		0.9276	0.8605	0.7983	0.7405	0.6869	0.6372	0.5911	0.5483	0.5087	0.4719	

Present Values ($1000)		(2,288)	(1,057)	-	(6,126)	(3,418)	-	-	-	-	-
Cumulative PV ($1000)	(12,890)	(2,288)	(3,345)	(3,345)	(9,471)	(12,890)	(12,890)	(12,890)	(12,890)	(12,890)	(12,890)

Second Reduced Plan
Use of Crosby-Ontario Cables
only incremental costs per plan are being evaluated

Base date	2002	
Escalation rate	3.0%	
Discount rate	7.8%	
Tax rate	40.0%	
Afudc rate	5.6%	
PVTWO (thru 2005)	63.77%	tax note: value applies to projects purchasing material prior to 9/10/04 and in service by 12/31/05
PVTWO (2006 & after)	51.35%	

DCF Analysis

$1000's - (2002$)

	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Totals
Investment Costs												
Grand - Crosby	2003											
install HPFF tranistion at Grand		(210)	(210)									(420)
Install HPFF duct & cable		(1,870)	(1,870)									
install new manhole		(50)	(50)									
Expand manhole		(25)	(25)									
Y - joints in manhole, pipe freeze		(220)	(220)									(440)
Subtotal		(2,375)	(2,375)	-	-	-	-	-	-	-	-	(4,750)
Randolph - West Loop	2006											
HDFF duct & Cable					(4,930)	(4,930)						(9,860)
Y-joints near Ontario, pipe freeze					(240)	(240)						-
Subtotal		-	-	-	(5,170)	(5,170)	-	-	-	-	-	(10,340)
Grand - Crosby	2006											
XLPE duct & cable					(2,240)	(2,240)						
XLPE cable (route B)					(630)	(630)						
Revise P/C as required					(50)	(50)						
Subtotal		-	-	-	(2,920)	(2,920)						(5,840)
Total Investments		(2,375)	(2,375)	-	(8,090)	(8,090)	-	-	-	-	-	(20,930)
Expensed Costs												
												-
Uninstall Y-joints					(60)	(60)						(120)
Pipe freeze (3 pipes)					(65)	(65)						(130)
												-
Total Expense		-	-	-	(125)	(125)	-	-	-	-	-	(250)
Non-depreciable costs												
Land purchase												-
Easement rights												-
Total non-depreciable costs		-	-	-	-	-	-	-	-	-	-	-
		(2,375)	(2,375)	-	(8,215)	(8,215)	-	-	-	-	-	

Escalated Budget $

	In-service date	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	
Investments												
Grand-Crosby	2003	(2,446)	(2,520)	-	-	-	-	-	-	-	-	(4,966)
Randolph - West Loop	2006	-	-	-	(5,819)	(5,993)	-	-	-	-	-	(11,812)
Grand-Crosby	2006	-	-	-	(3,286)	(3,386)	-	-	-	-	-	(6,672)
Total Investment $		(2,446)	(2,520)	-	(9,105)	(9,379)	-	-	-	-	-	(23,450)
Total Expense $		-	-	-	(141)	(145)	-	-	-	-	-	(286)
Total non-depreciable $		-	-	-	-	-	-	-	-	-	-	-
Total Budget $		(2,446)	(2,520)	-	(9,246)	(9,523)	-	-	-	-	-	(23,735)
Tax Impacts												
Grand-Crosby			1,302									
Randolph - West Loop						2,493						
Grand-Crosby						1,408						
Investment tax NPV subtotal		-	1,302	-	-	3,901	-	-	-	-	-	
Expense		-	-	-	56	58	-	-	-	-	-	
Total tax impact		-	1,302	-	56	3,959	-	-	-	-	-	
Totals		(2,446)	(1,218)	-	(9,190)	(5,564)	-	-	-	-	-	
PV factors		0.9276	0.8605	0.7983	0.7405	0.6869	0.6372	0.5911	0.5483	0.5087	0.4719	
Present Values ($1000)		**(2,269)**	**(1,048)**	**-**	**(6,805)**	**(3,822)**	**-**	**-**	**-**	**-**	**-**	
Cumulative PV ($1000)	**(13,945)**	**(2,269)**	**(3,317)**	**(3,317)**	**(10,122)**	**(13,945)**	**(13,945)**	**(13,945)**	**(13,945)**	**(13,945)**	**(13,945)**	

TEW - 6

ComEd Proposal
Cost Estimate for including Clybourn cutover to West Loop

Item	Quantity	Unit Rate ($)	Est Cost ($)
138 kV SF6 Breaker	1	$185,000	$ 185,000
138 kV Manual Disconnect Sets	3	$105,000	$ 315,000
138 kV CCVTs	3	$72,000	$ 216,000
Relaying and Controls	2	$85,000	$ 170,000
Testing and Commissioning	1	$40,000	$ 40,000
Duct and HPFF Cable from West Loop to Cut-in at north end of Crosby yard	2925	$1,000	$ 2,925,000
Manhole at Crosby Cut-in	1	$120,000	$ 120,000
Joint at Crosby Cut-in	1	$100,000	$ 100,000
Engineering	1	$45,000	$ 45,000
Misc Site Work, traffic, supervision, insurance, fees	1	$55,000	$ 55,000
Project Management, QA, Safety	1	$125,000	$ 125,000
Total			**$ 4,071,000**

Assumptions:
West Loop exists
Above scope is incremental to West Loop project

TEW - 6

Reduced Scope Plan
Cost Estimate for installing H - Bus at Clybourn with Cut-ins for line 4018 from Diversey to Crosby

Item	Quantity	Unit Rate ($)	Est Cost ($)
HPFF pipe duct from L4018 in/out of Clybourn	800	$1,100	$ 880,000
Push casing under railroad tracks	180	$500	$ 90,000
HPFF cable (3 phases)	2400	$100	$ 240,000
Manholes on Kingsbury St	2	$120,000	$ 240,000
Potheads in Clybourn	2	$105,000	$ 210,000
138 kV 63 kA SF6 Breaker	1	$185,000	$ 185,000
138 kV Mark V Circuit Switchers	2	$160,000	$ 320,000
138 kV Manual Disconnect Sets	12	$35,000	$ 420,000
138 kV CCVTs	6	$72,000	$ 432,000
Relaying and Controls (Diversey, Clybourn, Crosby)	5	$85,000	$ 425,000
Steel Structure & Foundations	1	$240,000	$ 240,000
Bus, cables, fittings	1	$72,000	$ 72,000
Transformer moves and Foundations	2	$316,000	$ 632,000
Grounding; Control cabling	1	$125,000	$ 125,000
Testing & Commissioning	1	$91,000	$ 91,000
Contaminated Soil Disposal	2700	$140	$ 378,000
Backfill	2700	$60	$ 162,000
Engineering	1	$360,000	$ 360,000
Misc Site work, traffic, supervision, insurance, fees	1	$408,000	$ 408,000
Project Management, QA, Safety	1	$738,000	$ 738,000
Total			**$ 6,648,000**

Assumptions:

Once the Dekoven to Crosby lines are completed, an extended outage can be taken on L4018 to bring it into TSS 54.

At TSS 54 Clybourn both TR 73 and TR 74 cannot be taken out of service at the same time due to station loading.

Construction of the new structure would use conventional outdoor 138kV equipment rated at 63kA.

Transformers 73 and 74 are in good condition and would be re-used.

Clybourn is build on an old gas plant site